ABSTRACT

Because the efficiency of the thermal energy storage technology is inherently restricted, its beneficial use is limited to very particular economic boundary conditions, i.e. a large difference between the value of electricity going *into* the unit and the value of electricity coming *out* of the unit. With the reduction in wind power equipment prices and the cost of fossil fuels and/or their combustion products this is occasionally the case for wind power. Wind is a free fuel and the value of wind power when there is too little load demand is essentially zero, and the value of wind power when there is demand is considerable indeed. Under these circumstances, a combination of electrothermal energy storage and combustion of (fossil) fuels as an auxiliary heat source provides for a cost efficient system for storing energy and an economical way of generating electricity.

Fig.2

Keyword: Electrothermal energy storage with an auxiliary heat source